November 12, 2003

Marlene H. Dortch, Commission Secretary
Federal Communications Commission, Office of the Secretary
445 12th Street, SW
Washington DC 20054

Dear Federal Communications Commission:

These comments are submitted on behalf of William R. Evans in response to the FCC Notice of Inquiry (NOI) in WT Dkt. No. 03-187, FCC 03-205, as published in the Federal Register of September 12, 2003, Volume 68, Number 177, Pages 53696-53702.

General comment

Thank you for instituting this Notice of Inquiry. I am an ornithologist who specializes in avian nocturnal migration. I need to state outright that the timing of this FCC Notice of Inquiry comment period (September 12 – November 12) is not conducive for receiving comments from ornithologists who study bird migration in North America, and whom are most likely to be informed on the scientific aspects of this issue. This is a time when we are generally in the field consumed with our research. In my case, I have been carrying out three separate field studies this fall. The NOI's information request is rather large. As someone who has been working on the bird mortality at tall man-made structures for more than 5 years, I have amassed quite a bit of knowledge on the subject. I could easily have spent a full week or more filling the FCC's information request on this subject. I'm sure most of my colleagues would agree. I hope the FCC will not be discouraged by the lack of scientific feedback received from the NOI or think that the feedback it does receive is in any way a complete account of the current knowledge on the subject. I encourage the FCC to continue filling its information needs by contacting Dr. Albert Manville, chair of the Communications Tower Working Group, and have him recommend specific individuals for you to seek additional information on this matter. My statements below therefore primarily just deal with my research that is pertinent to the issue of nocturnal songbird mortality at communications towers. I would be happy to address the questions of the NOI in more detail over the coming months if the FCC would still accept such input.

My background, current research, and partial comments

I have worked the past 20 years in developing the acoustic technique of monitoring birds in nocturnal migration. It is the only method that provides species information about the birds in active night migration over a monitoring site. I have been associated with Cornell University's Laboratory of Ornithology and am currently Executive Director of Old Bird, Inc., a nonprofit dedicated to advancing acoustic monitoring of avian migration (www.oldbird.org).

I was led to become involved in the issue of bird mortality at communications towers in 1997 when I recorded collisions and alarm vocalizations of migrating birds at a 317-ft. guyed communications tower near Ainsworth, NE. I was carrying out the recording as part of a study on avian night migration for an impact assessment of a proposed wind generation farm. I needed electric power to run my acoustic monitoring station and the radio station's broadcast station offered the only electric power in the area. I positioned microphones under the station's radio tower and aimed them at the sky to record any flight calls from birds passing in night migration.

Though I had been aware since my youth of avian mortality at tall (1000-ft agl) towers, I was surprised to document that a relatively short, 317-ft. agl guyed tower could also be a deadly obstacle to birds. Upon becoming aware of the buildout of communications towers for cellular service, and the proposed new TV towers for DTV service, I became involved in the bird mortality at communication towers issue. In April 1998 I helped write the Ornithological Council Resolution regarding communications towers and avian mortality. This was the first statement by North America's leading ornithological societies asking the USFWS to formally address the issue. In August 1999, I co-chaired the Workshop on Bird Mortality at Communications Towers at Cornell University. Since 1999 I have been a member of the USFWS chaired Communications Tower Working Group (CTWG).

In September 2000, I submitted the first bird/tower research proposal to be peer-reviewed by the CTWG entitled "What role does the flash rate on a red beacon communications tower play in leading birds to congregate in the vicinity of the tower?" The study was to be carried out with the help of TWR Lighting Co. of Houston, TX – one of the leading suppliers of aviation obstruction lighting in the US. The study received initial funding in late fall 2002. I proposed to study how the flash rate of red obstruction lighting affected the tendency of birds to congregate in the light's vicinity on low cloud ceiling or foggy nights. To carry out the study, I received FCC & FAA approval to modify the aviation obstruction lighting flash frequency and to periodically turn the red sidelights off at a 1000-ft TV tower (WICZ-TV) in Binghamton, NY. During the lighting changes, the bird activity in the vicinity of the tower was to be acoustically monitored

along with another technique such as infrared or with night vision scopes.

In the hiatus between when we submitted the proposal to the time funding was received, several changes in the study occurred. First, a major limitation of carrying out the original study plan was that specific weather conditions (low cloud ceiling or fog) were necessary on nights of significant bird migration at the WICZ-TV tower in Binghamton, NY. These conditions are unpredictable and some years may occur on numerous nights but in other years may not occur at all. In order to expedite the study, I added a mobile aviation obstruction light station to the study that could be transported to locations where heavy bird migration was predicted to coincide with low cloud ceiling or fog. The mobile station also facilitated experimentation with different colors and types of obstruction lighting. The modified study proposal was entitled "Toward bird-friendly aviation hazard lighting on tall man-made structures." This proposal was awarded a Neotropical Migratory Bird Conservation Grant in 2003.

The first fieldwork with the mobile station began in late spring of 2003 and has continued through the 2003 fall migration period. The obstruction lighting systems currently being tested are:

> Medium Intensity Red Beacon (Red 300MM Beacon, 2000 candela – FAA Type L-864).
>
> Dual Red and White Strobe (320MM lens – FAA Type L-864/L-865).

These lights and custom designed flash rate controller (for the medium intensity red beacon only) were purchased from TWR Lighting, Inc. In addition, the study received complementary low intensity red sidelights (L-810) from Galaxy Lightbeams, Inc. of Burbank, CA. Galaxy contributed these lights in order for the study to assess whether their neon light had different bird "attraction" characteristics than a similar intensity red incandescent light.

I do not have any concrete results to report after the first season of testing and I don't expect any statistically solid results until after the fall 2005 migration season. At that time I will report on how the bird congregation tendency varies with the flash rate of the medium intensity red incandescent obstruction lighting and how the medium intensity red incandescent obstruction lighting compares with the red and white strobe lighting in inducing bird congregation. It is possible if the weather cooperates that the study may yield significant results in 2004. I will be forwarding any such results promptly to the CTWG.

The vast bulk of the mortality at communication towers has occurred at towers with red incandescent beacons. However, even if the maximum flash rate found to induce bird congregation is still within the FAA flash rate regulations (20-40 flashes per minute), the bird congregation situation at towers lit with red incandescent obstruction lighting will not be remedied by simply reducing the flash rate to 20 flashes per minute. The permanently lit sidelights on these towers will still likely play a significant role in inducing congregation of night migrating songbirds.

It is not clear to me why the red strobe systems do not need sidelighting at night while the red incandescent systems do? A huge step in mitigating the problem of songbird mortality at communications towers would be to eliminate the need for permanent sidelighting on red incandescent beacon towers. This would certainly not cause a problem in the communications industry because the broadcasters would save considerable installation and annual relamping fees. The reason for the sidelighting resides in FAA regulations. I think the FCC should review the necessity for this regulation with the FAA.

Beyond eliminating red incandescent sidelighting (if feasible), retrofitting the slow flashing red incandescent beacons with red (or white) strobes would further reduce bird mortality. I believe my forthcoming research will support this transition. It is also possible that it will show that simply reducing the flash rate of the red incandescent lights to 20 flashes per minute will significantly reduce mortality, a relatively low cost fix for broadcasters (assuming the permanent sidelights could be eliminated).

Permanent lights on the ground near towers can contribute to the hazard of any FCC regulated communications tower. For example, on one low cloud ceiling, heavy bird migration, evening in September 1999, I studied bird congregation and associated mortality at three tall communications towers in central New York State. The towers were all within half a mile of one another in Binghamton, NY. One was a ~1000-ft white-strobed tower; one was a ~1000-ft red incandescent beacon tower; and one was a 553-ft white-strobed tower. Contrary to my preconceived notion at the time, I found that the bird congregation and mortality was largest around the 553-ft. white-strobed tower. The reason for this appeared to be that the TV station broadcasting from the 553-ft tower had its office on the property at the base of the tower. The office was lit up with permanent spotlights all night long. It appeared that the birds were more attracted to the illuminated area created by the spotlight than to the red incandescent or white strobes on the other towers in the vicinity. This is not a rigorous study but it added to my body of experience on the matter. My point here is that broadcast structures that the FCC regulates are made more or less hazardous to night-migrating songbirds depending on incidental lighting around the structure. The FCC should consider regulating this environmental variable around towers. Elimination of

bright, permanent lighting around communications towers would be a significant step in mitigating bird mortality at towers. I am in the middle of completing a study in western Maryland that clearly shows the impact that permanent lighting can have on attracting night migrating songbirds. The study consists of up to eight acoustic monitoring stations over a wide region each recording flight calls of night-migrating birds. Two stations were located on high schools that have extensive flood lighting at night. On migration nights with a low cloud ceiling, these stations regularly logged an order of magnitude or more calling than acoustic stations with minimal artificial lighting in their vicinity.

Strong circumstantial evidence indicates that red incandescent obstruction lighting is a major culprit of songbird mortality at towers. More than 99% of all the documented songbird mortality at towers is from towers with red incandescent beacons and permanent, red incandescent, sidelighting. There are relatively few bird kills documented at white or red-strobed towers. In fact, there are several bird morality surveys under towers that were terminated shortly after the study tower's red incandescent lights were replaced by white strobes – the bird kills abruptly stopped. The well-publicized kill at a series of three 420-ft agl, white-strobed, communications towers in western Kansas in 1998 was complicated by the fact that there was also bright permanent lighting near the towers.

I do not think that expensive, long-term, mortality studies are needed to document the extent of the tower mortality problem. The numerous, well-documented, regionally widespread, single night kills of 1000 or more birds should be reason enough to try and mitigate the problem. The FCC should focus efforts immediately on minimizing the impact of red incandescent lighting on night migrating songbirds. I concur with all the recommendations in the USFWS Tower Siting Guidelines and I'm confident that my studies will provide more definitive answers over the next few years.

Respectfully submitted,

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